

Appl. No. : 10/619,333
Filed : July 14, 2003

COMMENTS

Claims 1-37 remain pending in the present application, Claims 1-5, 14-28, and 34-37 having been withdrawn from consideration, Claims 6-13, and 29-33 presently under consideration.

In response to the Office Action mailed March 10, 2005, Applicants respectfully request the Examiner to reconsider the above-captioned application in view of the following comments.

Matsumoto Does Not Anticipate Claims 6 or 29

Claims 7 and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,445,473 issued to Matsumoto. Applicants respectfully traverse the present rejection.

Matsumoto is directed to a control system and method for carbureted induction systems. More particularly, some of the inventions disclosed in the Matsumoto reference are directed to using an auxiliary throttle valve to force some of the induction air flowing into the engine through an auxiliary induction passage in order to enhance the combustibility of air fuel charges at low or light engine loads. *See* Matsumoto, Abstract.

However, Matsumoto is not directed to a controller that is configured to detect an abnormality in the movement of a throttle valve and to compensate for the abnormal movement. In fact, the word “abnormal” does not appear anywhere in the Matsumoto reference.

In contrast, Claim 6 recites “The control device being configured to determine whether an abnormal condition occurs in setting the first valve to the desired position, the control device being configured to determine whether the amount of the first air is insufficient, the control device being configured to control the second valve to allow the secondary air to move to the combustion chamber when the control device determines that the abnormal condition occurs and the amount of the first air is insufficient.”

Similarly, Claim 29 recites, among other recitations, “determining whether an abnormal state occurs in setting the regulating valve to the desired regulating position, determining whether the amount of the air is insufficient, and delivering a supplementary amount of air to the engine when the occurrence of the abnormal state is determined and the insufficient condition of the air is determined.”

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This distinction is important because, as noted in the summary of the invention of the present application, “[u]nder some conditions, a throttle valve of an internal combustion engine can gradually become inoperable. For instance, the throttle valve can initially begin to stick or move more slowly than desired due to an increase in frictional resistance, and eventually seize. Also, valve actuators can also malfunction, and as a result, the throttle valve does not move to a valve position that the operator desires. In either event, the airflow into the engine can become unsatisfactory. Such a failure is particularly undesirable where the throttle valve is stuck in a closed or nearly closed position that may allow the engine to stall.” Present Application, page 2, paragraph 0009.

In an exemplary but non-limiting embodiment illustrated in Figures 1-6, the ECU 90 is used to read both a throttle valve position command θ_t and to read an actual throttle valve position θ_r . Further, at Step S10 (paragraph 00145 of the present specification) the ECU compares a current throttle valve position command θ_{tk} and a current actual throttle valve position θ_{rk} . If the difference between these values is above a predetermined threshold, the ECU 90 determines that an abnormality has occurred. Further, in Step S17, the secondary air intake device is used to compensate for the abnormality.

As noted above, Matsumoto does not disclose or suggest a system for detecting an abnormality and using an auxiliary air system to compensate for the abnormality. Thus, Applicants submit that Claims 6 and 29 clearly and non-obviously define over the Matsumoto reference. Further, Applicants submit that Claims 7-13, and 30-33 also define over the Matsumoto reference, not only because they depend from one of Claims 6 and 29, but also on their own merit.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any

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undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicants' attorney in order to resolve such issue promptly.

Respectfully submitted,

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